

KIT-331

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Hideo YOSHIZAWA, et al.
Serial No. : Please Assign
Filed : Herewith
For : METHOD OF MANUFACTURING GLASS PANEL AND GLASS
PANEL MANUFACTURED BY THE METHOD

August 23, 2001

Commissioner of Patents
and Trademarks
Washington, D.C 20231

PRELIMINARY AMENDMENT

Sir:

Prior to examination of the above case, please amend the above-identified application as follows:

IN THE CLAIMS:

Cancel claims 1-14, without prejudice and substitute the following claims:

-- 15. A method of manufacturing a glass panel, the method comprising the steps of: disposing a number of spacers between a pair of glass sheets; sealing outer peripheries of the glass sheets with an outer periphery sealing portion to form a gap between the glass sheets; forming a vent in one of the glass sheets for evacuating gas from the gap; evacuating the gas in the gap via the vent to depressurize the gap; and then sealing the vent;

wherein at the sealing step of sealing the vent, a metal solder is employed as a sealing material, a piece of the metal solder is heated and molten adjacent the vent to break open an oxide skin on the surface of the metal solder, so that the metal solder therein is allowed to flow

out through the broken oxide skin to come into contact directly with the one glass sheet whereby the metal solder is cooled and solidified by the contact, thus sealing the vent.

16. The method of manufacturing a glass panel according to claim 15, wherein an inflow preventing member is provided at a longitudinal intermediate portion of the vent for preventing the flown-out metal solder from flowing into the gap.

17. The method of manufacturing a glass panel according to claim 16, wherein the inflow preventing member includes a getter for adsorbing the gas in the gap.

18. The method of manufacturing a glass panel according to claim 15, wherein an annular restricting member for restricting outflow of the metal solder is provided so as to surround the vent and the metal solder piece, and the metal solder is allowed to flow out through the oxide skin on the surface of the molten metal solder piece while the restricting member is maintained in contact with the surface of the one glass sheet.

19. The method of manufacturing a glass panel according to claim 15 wherein the metal solder comprises indium or an alloy including indium.

20. A glass panel including a pair of glass sheets disposed with a number of spacers therebetween, outer peripheries of the glass sheets being sealed with an outer periphery sealing portion to form a gap between the glass sheets being formed in one of the glass sheets for evacuating gas from the gap to depressurize the gap and then being sealed;

wherein the vent is sealed by the metal solder with the metal solder being introduced into the vent.

21. The glass panel according to claim 20, wherein an inflow preventing member is provided at a longitudinal intermediate portion of the vent for preventing the flown-out metal solder from flowing into the gap with the metal solder being introduced up to the inflow preventing member.

22. The glass panel according to claim 21, wherein the inflow preventing member includes a getter for adsorbing the gas in the gap.

23. The glass panel according to any claim 20, wherein the metal solder comprises indium or an alloy including indium.

24. A method of manufacturing a glass panel, the method comprising the steps of: disposing a number of spacers between a pair of glass sheets; sealing outer peripheries of the glass sheets with an outer periphery sealing portion to form a gap between the glass sheets; forming a vent in one of the glass sheets for evacuating gas from the gap; evacuating the gas in the gap via the vent to depressurize the gap; and then sealing the vent;

wherein at the sealing step of sealing the vent, a metal solder is employed as a sealing material, a piece of the metal solder is heated and molten adjacent the vent to break open an oxide skin on the surface of the metal solder, so that the metal solder therein is allowed to flow out through the broken skin into the gap to come into contact directly with a portion of the surface of the one glass sheet defining the vent on the side of the gap, the portion being around the vent, and also with a portion of the surface of the other glass sheet on the side of the gap, whereby the metal solder is cooled and solidified by the contact to block communication between the vent and the gap, the portion being in the vicinity of the vent, thus sealing the vent.

25. The method of manufacturing a glass panel according to claim 24, wherein the portions of the glass sheets on the side of the gap coming into direct contact with the metal solder are formed in advance into smooth faces.

26. The method of manufacturing a glass panel according to claim 24, wherein the metal solder comprises indium or an alloy including indium.

27. A glass panel including a pair of glass sheets disposed with a number of spacers therebetween, outer peripheries of the glass sheets being sealed with an outer periphery sealing portion to form a gap between the glass sheets a vent being formed in one of the glass sheets for evacuating gas from the gap to depressurize the gap and being sealed;

wherein a metal solder is charged within the gap in such a manner as to come into direct contact with a portion of the surface of the one glass sheet defining the vent on the side of the gap, the portion being around the vent and also with a portion of the surface of the other glass sheet on the side of the gap, the portion being in the vicinity the vent, thereby to block communication between the vent and the gap, thus sealing the vent.

28. The glass panel according to claim 27, wherein the metal solder comprises indium or an alloy including indium.

REMARKS:

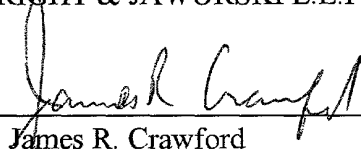
The purpose of this amendment to is conform the claims to U.S. practice.

Entry of this amendment is respectfully submitted.

Respectfully submitted,

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